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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding Policies and Protocols for Demand Response Load Impact Estimates, Cost-Effectiveness Methodologies, Megawatt Goals and Alignment with California Independent System Operator Market Design Protocols.

Rulemaking 07-01-041  
(Filed January 25, 2007)

**ADMINISTRATIVE LAW JUDGE'S RULING PROVIDING  
GUIDANCE ON CONTENT AND FORMAT OF 2009-2011 DEMAND  
RESPONSE ACTIVITY APPLICATIONS**

In Decision (D.) 06-03-024, the California Public Utilities Commission (Commission) approved Demand Response (DR) activities and budgets for Southern California Edison Company (SCE), San Diego Gas and Electric Company (SDG&E) and Pacific Gas and Electric Company (PG&E), and required these investor-owned utilities (IOUs) to file IOU-specific DR program applications (Applications) by June 1, 2008 for approval of DR activities and budgets for 2009-2011. This ruling provides guidance on the expected scope and contents of those Applications. The purpose of this ruling is to encourage proposals consistent with the Commission's expectations for the development of DR over the next several years, and to ensure that the Applications contain sufficient information to support a thorough and comprehensive review of DR activities and budgets.

## **1. Background and Context**

In early June 2005, the IOUs filed applications requesting approval of DR programs and budgets for 2006-2008. In D.06-03-024, the Commission adopted programs and associated budgets for 2006-2008, proposed as part of an uncontested settlement on those applications, and ordered the IOUs to file applications for 2009-2011 DR programs and budgets by June 1, 2008.<sup>1</sup> To improve system reliability during peak periods in summer 2007 and 2008, the Commission made interim changes to these programs, modifying and augmenting them in D.06-11-049 in that same proceeding.

On January 25, 2007, the Commission opened Rulemaking (R.) 07-01-041 to address several specific issues related to the Commission's efforts to develop effective DR programs for California's investor-owned utilities. Phase 1 of this rulemaking addresses development of methodologies for estimating the load impact and cost effectiveness of DR programs, and Phase 2 of this rulemaking focuses on the development of goals for DR for 2008 and beyond. In comments in the course of both Phase 1 and Phase 2, parties expressed opinions about the appropriateness of including particular DR activities and program design features in proposed 2009-2011 DR programs, and about the appropriate scope for the 2009-2011 DR Program and Budget Applications proceeding.<sup>2</sup>

In response to parties' concerns, I held a workshop on December 18, 2007, to solicit party input on the appropriate focus and content for the 2009-2011

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<sup>1</sup> D.06-03-024 p. 20.

<sup>2</sup> See, for example, SCE Comments, pp. 3-4, and DRA comments, pp. 1-2, filed in Phase 2 on November 26, 2007, PG&E reply comments on Cost Effectiveness issues, p. 4, filed in Phase 1 on December 7, 2007.

applications. This workshop took the form of a broad scoping session. The issues and concerns expressed in that workshop, in which all parties were encouraged to make suggestions for the types of information, data, and analysis that should be included in 2009-2011 DR applications, are addressed in this guidance ruling to the extent it is appropriate. Issues discussed at the December 18, 2007 workshop included the expected scope for the DR applications, the extent to which IOUs would be expected to propose programs compatible with the forthcoming Market Redesign and Technology Upgrade (MRTU) and the means for phasing in such compatibility, types of DR activities that the Commission should encourage in these applications, and the possible criteria for evaluating IOU proposals. All of these issues are addressed in this guidance ruling.

Unlike other electric demand-side management (DSM) strategies such as energy efficiency, with which California utilities have years (and in some cases, decades) of experience, DR activities are relatively new. The Commission first initiated a proceeding focused exclusively on encouraging DR in 2002, R.02-01-006. The IOUs' 2006-2008 program and budget applications represented the first attempt to review DR activities in a comprehensive way for the three IOUs, and so application and review standards were not yet well defined. Phases 1 and 2 of R.07-01-041 are expected to provide methodologies that improve the Commission's ability to evaluate program impacts and effectiveness (Phase 1), and provide direction for improvements in DR over the next several years (Phase 2).

Though this guidance comes before decisions are issued in Phases 1 and 2 of this proceeding, and does not presuppose a particular outcome of those phases, this guidance provides detail in areas not covered in those phases and

should not conflict with Commission actions in those phases. Forthcoming decisions on Phase 1 and 2 should provide additional direction for the contents and review of the 2009-2011 applications. Additional proceedings related to DR (including applications for approval of specific DR contracts, advanced metering proposals, as well as a thorough exploration of dynamic pricing) are continuing in separate Commission proceedings. How those proceedings relate to this ruling is described in Section 3.6.

### **1.1. Relationship with Market Redesign and Technology Upgrade**

On November 9, 2007, the California Independent System Operator (CAISO) issued a straw proposal to stakeholders on the inclusion of DR into CAISO's wholesale markets with MRTU Release 1A.<sup>3</sup> MRTU Release 1A is scheduled for implementation on April 1, 2009 (one year after the then-expected MRTU startup date), when the IOUs' new 2009-2011 DR programs are expected to be in effect. CAISO recently announced that MRTU startup will be delayed; no new startup date has been announced. Because of this, it is possible that the date for Release 1A may be later than April 1, 2009.

The CAISO straw proposal for DR in MRTU Release 1A outlines two categories of DR activities that it expects will be able to compete in the wholesale market as a bid-in resource similar to generation. CAISO calls these different categories "Participating Load" and "Non-Participating Load." In order for a DR activity to qualify as Participating Load, the CAISO must be able to directly dispatch the associated resources. Under CAISO's MRTU Release 1A proposal, Participating Load will be able to compete directly with generating

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<sup>3</sup> <http://www.caiso.com/1c91/1c919e0e11c30.pdf>.

resources in all of CAISO's wholesale markets, including Ancillary Services, Residual Unit Commitment, day-of markets, and day-ahead markets. These resources will bid-in and settle on a nodal or custom load aggregation point in a manner similar to that used by some generation resources. The attributes of Participating Load will allow the CAISO to dispatch the resource to meet local needs or relieve congestion. Resources that qualify as CAISO Participating Load will have access to multiple avenues for participating in the market (day-ahead, day-of, and real time bids, for example), and will be able to take advantage of high settlement prices through the use of custom load aggregation, in which the resource can be paid based on the price in a smaller local area than covered by the larger default regions. According to CAISO, Participating Load in CAISO markets should have the potential to meet local resource adequacy needs, mitigate scarcity pricing events, help to mitigate market power, and place downward pressure on peak energy usage and cost.

CAISO's Non-Participating Load product proposal includes DR resources that are not dispatchable by the CAISO. Under its current proposal, CAISO would allow these resources to bid into the day-ahead market with a price sensitive bid, based on the cost and supply expected at the time. These resources would be scheduled at the default load aggregation point (LAP). Because Non-Participating Load resources are not dispatchable by the CAISO (and are therefore considered less reliable and transparent), CAISO's proposal for MRTU Release 1A would not allow Non-Participating Load to bid into the day-of market, nor supply Ancillary Services or Residual Unit Commitment (RUC). The Non-Participating Load proposal allows the market to account for this DR by including it in the bidding and scheduling process. Resources

functioning as Non-Participating Load receive wholesale market settlements for curtailment at a price the resource chooses as economically viable.

The CAISO expects to complete the Business Practice Manual and User Guide for Participating and Non-Participating Load by July 2008, shortly after the IOUs' 2009-2011 DR applications are filed. Integration testing with MRTU software is expected in September to December 2008. Market simulation tests are expected in March 2009, with full implementation expected on April 1, 2009, but possibly subject to delay following the delay of MRTU Release 1. In order to work as directly as possible with the new wholesale market under MRTU Release 1A, the IOUs' 2009-2011 programs should be designed to be as compatible as possible with both expected requirements and Commission policies on DR. Though the documentation for Release 1A may not be complete until after the IOUs' applications are filed, and tariffs will not yet have been approved by the Federal Energy Regulatory Commission (FERC) and therefore will be subject to change, the IOUs should use information that is already available from CAISO on expected requirements in designing their DR programs. IOUs are also encouraged to work with CAISO (through ongoing stakeholder working groups on the development of DR in MRTU Release 1A and beyond) to ensure that their proposals will take full advantage of MRTU's expected operations.

## **2. Energy Efficiency/Demand Side Management Strategic Planning**

D.07-10-032 requires development of an energy efficiency (EE) strategic plan that will "(1) address the full range of comprehensive consumer

demand-side options,<sup>4</sup> such as DR, advanced meters, conservation and self-generation; [and] (2) present a systems approach that encompasses all types of measures, programs and activities, including research and development, codes and standards, design, hardware, controls, installation, maintenance, and user behavior...”<sup>5</sup> The Commission’s goal in requiring this strategic plan “is not to consolidate these programs under one administrator, but rather to find energy efficiency opportunities in these programs and, to the extent that energy savings can be directly attributable to the utilities’ energy efficiency efforts, count those savings towards achievement of the energy efficiency goals.”<sup>6</sup> The IOUs’ EE applications for 2009-2011 will therefore include information on proposals that coordinate EE and DR. That information should also be included in DR applications to enable a comprehensive review of all DR activities in one proceeding.

The Applications should describe programs, activities, and funding requests for combined or coordinated DR/EE activities, and should enumerate them separately from non-EE-related projects to ensure the total funding amount for these programs is clear and can be separated from DR-only activities. This

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<sup>4</sup> D.07-10-032 footnote 33: “Many consumer demand-side options are offered by non-utility providers. For example, demand response aggregators enroll customers in utility programs and their own DR programs. In the future DR aggregators and individual customers may offer DR directly into the CAISO’s energy and ancillary services market. Another example is the Self Generation Incentive Program, which is currently administered by CCSE [in the SDG&E territory, and by SCE and PG&E in their own territories]. The Plan should recognize the existence of non-utility providers.”

<sup>5</sup> D.07-10-032 p. 29.

<sup>6</sup> *Id.*

will facilitate review of coordinated activities in both proceedings while ensuring that associated costs are not double-counted in the applications or resulting decisions. The Commission's Energy Division hopes to hold a workshop later this spring to discuss coordination among EE and other DSM programs, and the Commission may release additional guidance on DR/EE coordination before the Applications are filed.

### **2.1. Coordination of Marketing, Education and Outreach**

D.07-10-032 also requires the EE strategic plan to emphasize increased coordination between marketing, education, and outreach (ME&O) for all DSM programs. Consistent with the direction in D.07-10-032, the Applications should include the ME&O funds and activities that include DR components, whether the activities have been previously approved by the Commission or are being proposed by the utilities, and whether or not they also relate to EE or other DSM programs. The Applications should include specific proposals for implementing the coordinated approaches to marketing and outreach in the Strategic Plan.<sup>7</sup> The Applications should describe the utilities' plans to leverage these funds to undertake joint marketing of DR programs with other DSM programs, especially EE. Total costs should be listed, but costs of DR-related activities not associated with other DSM programs should be listed separately to facilitate the removal of joint costs from consideration in the DR application if it is determined they will be approved in some other proceeding. The information provided should be consistent with ME&O information provided in the EE applications. If possible,

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<sup>7</sup> D.07-10-032, pp. 62-66.



future Commission guidance will clarify the review process for these ME&O funds.

### **3. Scope of the Applications: What Type of DR Activities Should Be Included?**

In general, the Applications should focus on DR activities that further the Commission's policy goals as laid out in the Energy Action Plan II and in prior Commission decisions. This includes most programs in the "price responsive" and "reliability triggered" categories in past applications.<sup>8</sup> Emergency triggered programs should also be included, even those that are also reviewed in the utilities' general rate cases (GRCs). The goal of including all programs here is to enable this proceeding to become the venue for a comprehensive look at all DR programs. This would allow for greater detail in the review of program design than may be possible in other proceedings that focus primarily on different issues, such as rate design. Consolidation of all programs in these applications will also move towards placing the review of all DR, including emergency triggered DR programs, on the same schedule for all utilities, and allowing comparisons among those programs. A comprehensive examination of all DR programs in these Applications will facilitate review of the cost-effectiveness of DR programs and portfolios.

Examples of existing and new programs to be included in these applications include, but are not limited to:

- Emergency triggered DR programs such as I-6, AC Cycling, and the Base Interruptible Program; and

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<sup>8</sup> As described here, the Applications should include most DR programs involving incentive payments.

- Price responsive programs such as the Demand Bidding and Capacity Bidding Programs

Sections 3.1-3.5 provide a more detailed discussion of some specific issues that are considered to be within the scope of these applications; Section 3.6 identifies other proceedings that are addressing issues related to demand response. These sections are intended to address questions raised by parties at the December 18, 2007, workshop. Additional guidance on desirable pilots and program modifications that should be included within the scope of the Applications is described in Section 4.

### **3.1. The Commission Encourages Proposals Designed to Function Within the Expected MRTU Structure**

IOUs should assume that the proposed DR activities contemplated in the Applications to be compatible with MRTU Release 1A can be implemented as soon as April 2009; a later date may be necessary, depending on the start date of MRTU as discussed in Section 1.1, above. To the extent that there are changes in MRTU that depart from currently available information, or there are changes to the Business Practice Manual and User Guide for Participating and Non-participating Load after the Applications are submitted, IOUs may submit applications for new programs or program modifications for implementation during the 2009-2011 period to take advantage of new capabilities, as appropriate.

The requirement that the Applications be as comprehensive as possible and conform with MRTU requirements as they are understood at the time the Applications are filed should maximize the ability of parties and the Commission to evaluate a comprehensive set of DR activities and understand how they are likely to function within the new wholesale market. At the same time, it is reasonable to allow IOUs to submit an application to change programs adopted

for 2009-2011 during the program period if necessary to take advantage of any unexpected features of MRTU.

### **3.2. Inclusion of Demand Response Contracts**

The Applications shall include information on existing DR contracts approved in other proceedings<sup>9</sup> or via an advice letter process. Though the Commission does not intend to review recently-approved contracts again in the context of these Applications, this information will assist in the review of new proposals by ensuring that the Applications allow parties and the Commission to review all existing and proposed sources of DR in the 2009-2011 period together, as part of one comprehensive DR portfolio proposal. Towards this end, applications must include descriptions of the key elements of the contracts along with data comparable to that provided for the IOUs' other existing programs that the IOU proposes to continue during 2009-2011. Information on existing contracts should be provided in the same format that is used in the proposals for continuing other existing programs, as discussed in Section 5 below. In addition, applications should include copies of the actual approved contracts.

IOUs may also include in their Applications requests for approval of DR contracts, such as those requested but not (yet) approved in recent proceedings.<sup>10</sup> The information and analysis accompanying requests for approval of contracts should be comparable to the information provided on other IOU DR proposals; the information to be included in such requests is described in Section 5 below, and should be in a format comparable to that agreed on by the IOUs and Energy Division. As in past proceedings, parties should work out

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<sup>9</sup> Such as in D.07-05-029.

<sup>10</sup> A.07-10-013 provides one example.

non-disclosure agreements for confidential information amongst themselves as appropriate. If an IOU chooses to propose an RFP process for future DR, rather than proposing specific contracts, the Application should include details of the proposed RFP, including the characteristics and attributes of the DR resources being sought, eligibility requirements, criteria for evaluation of bids, the schedule and description of the proposed RFP review and approval process, and any other relevant information.

### **3.3. Business Energy Coalition (BEC)**

PG&E's Business Energy Coalition (BEC) Program started as a pilot program intended to attract "hard to reach" customers.<sup>11</sup> One of the key components of the BEC's design is that it has an incentive structure that guarantees a portion of the capacity payment to participants, irrespective of the participants' performance. Attracting customers to DR programs is a challenge the Commission recognizes, and designing programs with such features can be appropriate. However, participants in programs like the BEC should not expect to stay on such programs indefinitely. In fact, participants in the BEC are arguably no longer "hard to reach" after a year of being on the program and participation in at least one DR event. In whatever formal application PG&E chooses to include the BEC (the Applications that are the subject of this ruling, or another formal application, as allowed by D.07-12-048), PG&E should provide a transition plan that specifically addresses when and how participants who are enrolled in the BEC will transition to other DR programs where incentives are directly tied to performance. If other IOUs propose a similar program for hard-to-reach customers, those proposals, too, should include plans specifying

how participating customers will be transitioned to other DR programs where incentives are directly tied to performance.

### **3.4. Multi-Program Participation Rules**

In the Energy Action Plan II the Commission emphasized the expansion of dynamic pricing.<sup>12</sup> However, some of the IOUs' voluntary demand response programs prohibit a customer from participating in both the voluntary demand response program and dynamic pricing, such as CPP.

For each program proposal in the Applications, the IOU should explain whether participants can simultaneously enroll in CPP or any other dynamic pricing option that may become available during the 2009 to 2011 program cycle. If the IOU's proposal is to prohibit participation in CPP or other dynamic pricing options, the Application should include the IOU's rationale for this choice. If the IOU's proposal is to allow participation in CPP or other dynamic pricing options, then the IOU should provide the rationale for this choice and explain how a customer's load drop will be attributed to the demand response program and dynamic pricing.

The IOUs' Applications should also discuss whether customers can participate in multiple demand response programs and provide a rationale justifying the proposal. Opportunities for multi-program participation have been extremely limited in the past because of concerns about the possibility that customers could receive more than one payment for a single load reduction (sometimes referred to as "double-dipping"). It is possible that program rules can be developed that allow for multi-program participation. If it appears that

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<sup>11</sup> The Commission defines "hard to reach" customers in D.07-12-048.

<sup>12</sup> Dynamic pricing includes critical peak pricing (CPP) and real-time pricing (RTP).

enrollment in multiple DR programs may be possible without risking “double-dipping,” IOUs should propose program rules and tariffs that allow for multiple enrollment.

### **3.5. Energy Efficiency/Demand Side Management Strategic Planning**

As discussed in Section 2, above, pilot programs, ME&O activities, and other activities that promote coordination among DR and EE are within the scope of the Application proceeding and should be included in the Applications. Since such programs will be included in both the upcoming EE applications and these DR applications, the Applications should be written in a way that makes it easy to separate joint costs from DR-only costs, in order to facilitate review of coordinated activities in both proceedings and avoid double-counting. This will also allow the Commission the flexibility to determine whether these programs will be reviewed or approved primarily in the EE 2009-2011 Application proceedings or in the Application proceeding.

### **3.6. Other Demand Response-Related Proceedings**

Several Commission proceedings other than these forthcoming Applications are also addressing demand response-related issues. IOUs should avoid duplicating efforts in this proceeding that are being undertaken elsewhere. In general, dynamic pricing proposals such as Critical Peak Pricing (CPP) and Real-Time Pricing proposals should not be included in the Applications, as they are already being considered in other proceedings, particularly the IOUs’ GRCs. Here we identify some of those specific proceedings.

In D.06-05-038, the Commission ordered each IOU to “incorporate default [CPP] tariffs for all eligible customers 200 kilowatts (kW) and above into their next comprehensive rate design proceeding or other appropriate

proceeding if directed by the Commission.”<sup>13</sup> Thus, CPP is under consideration in several utility-specific rate design proceedings.

For PG&E, the Commission is developing a strategic work plan in Application (A.) 06-03-005 to implement dynamic pricing for all customers. That proceeding is focused on rates such as CPP and RTP. PG&E has also proposed a Peak Time Rebate (PTR) rate for residential customers in its advanced metering upgrade application, A.07-12-009.

For SDG&E, the Commission will be considering a proposed decision in its rate design proceeding, A.07-01-047, which includes specific dynamic pricing rate design proposals.<sup>14</sup>

SCE refers to possible Peak Time Rebate and CPP rates in its AMI deployment application, A.07-07-026, and is expected to propose such rates in its 2009 GRC Phase 2 (rate design) application.

The Applications should identify and describe efforts to address demand response, including PTR and dynamic pricing proposals that are ongoing in other proceedings in order to ensure that the programs proposed in the Applications can be reviewed in sufficient context. Unless directed by the Commission, however, the IOUs should not make proposals in their Applications that duplicate proposals that are under consideration in the proceedings noted above or other proceedings.

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<sup>13</sup> D.06-05-038, p. 1.

<sup>14</sup> According to the settlement that would be adopted by the proposed decision, SDG&E intends to file its PTR implementation plan and other details in its 2009 to 2011 demand response application (*see* Proposed Decision of ALJ Wong in A.07-01-047, pp. 22-23).

#### **4. Activities Consistent With Existing Commission DR Policy**

Though specific goals for 2008 and beyond have not yet been adopted, the following activities are consistent with existing Commission policy and should be included in the Applications. If a decision is issued in Phase 2 of R.07-01-041 adopting DR goals, the IOUs should also incorporate those adopted goals in developing their proposals.

##### **4.1. More Participating Load**

As discussed in Section 1.1 above, CAISO anticipates two different categories of DR that may take part in wholesale markets under MRTU Release 1A: “Participating Load” and “Non-Participating Load.”

Participating Load, which must be dispatchable directly by the CAISO, will have many advantages over Non-Participating Load, including the ability to compete directly with generation in all of CAISO’s wholesale markets, such as ancillary services, Residual Unit Commitment, day-of, day-ahead, and real-time markets. Because of this flexibility and the ability of Participating Load to use custom load aggregation, Participating Load will be more responsive to market conditions and better able to meet specific system needs and perhaps affect peak energy demand or costs. This makes Participating Load more versatile than Non-Participating Load, which is limited to participating in day-ahead markets and is less likely to have an immediate effect on peak energy demand or costs.

Inclusion of Participating Load in CAISO markets has the potential to mitigate scarcity pricing events and compete against generators as a resource in both the day-ahead and real-time markets. This potential may help to mitigate market power and place downward pressure on peak energy usage and cost. Though applications are not required to include a particular amount of DR from activities that will qualify as Participating Load rather than Non-Participating



Load, the IOUs are encouraged to propose programs that would qualify as Participating Load. In addition to proposing new programs that could function as Participating Load, the IOUs should assess the potential advantages and disadvantages of modifying existing programs to function as Participating Load. Where it appears advantageous to do so, the IOUs should propose modifications to existing programs in order to allow them to transition into Participating Load. For those programs that the IOUs determine are not good “fits” for Participating Load, the IOUs should explain how they reached that conclusion. Though all programs may not make this transition at this time, IOUs are encouraged to increase the flexibility of their programs, including emergency triggered DR programs, by incorporating the attributes of Participating Load.

Energy Division has conducted research on emergency triggered DR programs in other states and their corresponding Independent System Operators or Regional Transmission Operators. The IOUs should look to other markets for examples of how programs, especially emergency triggered DR programs, can be integrated more fully into the wholesale market. Despite structural differences between California and other markets, entities that offer DR in California can still learn ways to make emergency triggered DR programs more compatible with the wholesale market by examining the approaches taken in other states.<sup>15</sup>

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<sup>15</sup> See Attachment A for a few examples of approaches used in other parts of the country.

#### **4.2. Expanding Programs that Promote Enabling Technologies**

The Applications should propose improving existing programs or propose new programs that promote or encourage adoption of technologies that facilitate demand reduction. These programs should reflect improvements recommended in evaluations of the current Technical Assistance/Technical Incentives (TA/TI) Program, recent research from the DR Research Center (including research on automatic DR) and PG&E's Auto DR project, and the various "smart thermostat" experiments and projects conducted by the California IOUs and other utilities around the country.

In particular, program designs should facilitate the participating customer's ability to develop and implement effective load shedding strategies and provide opportunities to integrate these strategies with EE improvements. Also, the design of program incentives should not perversely discourage efficiency and conservation during non-event periods. Transitional incentives that provide assistance to customers both in developing shed strategies and purchasing enabling technologies should be coordinated with programs and rates that provide an ongoing performance incentive.

#### **4.3. Augmenting Auto DR**

In late 2006, the Commission modified the IOUs' 2006-2008 DR programs by adopting programs for 2007 and 2008 that encourage automatic DR (Auto DR). Auto DR links customers' electric devices and energy management control systems with externally-generated price or emergency signals, allowing usage to be reduced or curtailed without requiring customer action. Auto DR often requires the installation of control equipment (similar to the enabling technologies described in Section 4.2). To be most effective, technology facilitating Auto DR should be integrated with utility DR programs.

In the Applications, the IOUs should recommend ways to augment and extend existing Auto DR programs to improve their performance and, if appropriate, propose new programs that increase the amount or effectiveness of Auto DR. The results of Auto DR programs implemented since 2006 should provide information on which to base program improvements.

#### **4.4. Possible Pilots**

In their Applications, the IOUs should also evaluate and provide an analysis of the ability of DR to do the following: provide ancillary services, assist with integration of renewable energy sources through following intermittent load, and provide small load aggregation. The IOUs may propose programs based on these ideas if sufficient information is available to support such a proposal, or otherwise may propose pilots designed to provide enough information to determine the viability of adopting a more widespread program in the future. Proposed programs in these areas must include information comparable to that provided on all other program proposals. Pilot proposals should be supported by a full description of the proposed pilot (e.g., how it will operate including all key characteristics, its timeframe, possible next steps after completion), as well as the reason a pilot is needed, the information that the pilot will provide, and how the information gained through the pilot will inform future decision-making on whether the activity is appropriate for more widespread application.

Each IOU should discuss all three areas and propose at least one program or pilot in one of the following areas in its 2009-2011 DR Application. To the extent possible, the IOUs should coordinate with each other in an effort to propose viable programs or pilots in all three of the areas described below somewhere in the state over the 2009-2011 period. Pilots should be designed to

be as cost effective as possible, and will be evaluated in part on their feasibility and cost effectiveness. Each IOU may propose more than one pilot, and in addition to considering the following ideas may propose pilots on other issues not identified here.

#### **4.4.1. Ancillary Services**

Under its current system, CAISO allows Participating Load to provide ancillary services, and CAISO expects to expand this ability in MRTU Release 1A.<sup>16</sup> Currently, the IOUs do not administer DR programs that provide ancillary services to the CAISO. In contrast, California's Department of Water Resources uses its pump storage load to supply hundreds of ancillary services megawatts to the CAISO, and recent developments show that DR can be used in this way. For example, SCE together with members at Lawrence Berkeley National Laboratory recently demonstrated that a unique use of air conditioning load can provide non-spinning reserves. Also, Energy Division has heard from DR aggregators that they have provided ancillary services in east coast wholesale markets. Recognizing the limitation and barriers caused by current Western Electricity Coordinating Council standards,<sup>17</sup> the IOUs should propose programs (if possible) or pilots that use DR resources to provide CAISO with ancillary services.

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<sup>16</sup> <http://www.aiso.com/docs/2005/10/05/2005100520280423155.html>.

<sup>17</sup> According to Western Electricity Coordinating Council standard, DR may only supply non-spinning reserves; in contrast, the North America Electric Reliability Corporation allows DR to supply non-spin, spin, regulation up and regulation down.

#### **4.4.2. Following Intermittent Load - Renewables**

Under California's renewable portfolio standard (RPS), new and creative methods will be required in order to integrate into the electricity supply many of the renewable resources that are intermittent. It is possible that intermittent renewable resources can be better integrated to serve load through the use of permanent load shifting techniques such as energy storage; if so, this could assist in meeting the state's RPS standard. Recent studies by the California Energy Commission and CAISO provide some background on this issue and may be useful in developing proposals.<sup>18</sup> It is also possible that programs utilizing other aspects of DR such as AMI, rate design, or curtailment programs, may follow intermittent load and help to integrate those resources. Towards this end, IOUs should propose one or more programs or pilots that would use DR to track and compensate for changes in load due to intermittent renewable resources.

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<sup>18</sup> See, for example, <http://www.caiso.com/1ca5/1ca5a7a026270.pdf> and [http://www.energy.ca.gov/pier/final\\_project\\_reports/CEC-500-2005-136.html](http://www.energy.ca.gov/pier/final_project_reports/CEC-500-2005-136.html).

#### **4.4.3. Small Load Aggregation**

Consistent with one provision of the Draft Goals Document prepared by Energy Division and released in Phase 2 of this OIR, the IOUs should propose pilots or programs that aggregate small loads in order to allow smaller customers, which have been unable to provide DR in the past, to be given the opportunity to contribute DR. For many reasons, current IOU DR Programs focus on large commercial and industrial customers; expanding the participant pool to smaller loads improves the possibility of increasing the total number of DR megawatts (MW). In part to make this possible, the CAISO proposes to lower the MW bid-in threshold for participation in CAISO's wholesale market; beginning with MRTU Release 1A, DR resources aggregated to 0.1 MW will be allowed to bid into the wholesale market.<sup>19</sup> Energy Division believes CAISO's proposal for inclusion of these small resources is important to the viability of DR as a wholesale market resource. The knowledge gained by the IOUs in conducting small load aggregation programs or pilots should help IOUs in expanding the DR available from smaller customers in the future, and could potentially help other Load Serving Entities to develop DR programs to offer to their customers.

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<sup>19</sup> Lowering this threshold was one of the market barriers noted by the FERC in their recent Demand Response Advanced Notice of Proposed Rulemaking on Wholesale Competition in Regions with Organized Electric Markets. *See, Wholesale Competition in Regions with Organized Electric Markets*, 119 FERC ¶ 61,306, Docket Nos. RM07-19-000 and AD07-7-000, (June 22, 2007); available at: [http://elibrary.ferc.gov/idmws/File\\_list.asp?document\\_id=13517505](http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13517505).

## **5. What to Include in Program Design Descriptions**

The following discussion specifies the types of information that IOUs must provide in support of the DR programs that they propose to continue or newly implement through their Applications. At the December 18, 2007 workshop, PG&E agreed to lead an effort with IOUs and interested parties to create a template for program descriptions and information, to ensure consistency in their application formats and contents, and submit the agreed-upon template to Energy Division staff for comment and approval. PG&E submitted a template proposal to Energy Division, which Energy Division is currently reviewing for completeness. The IOUs will work with Energy Division to finalize the template by April 1, 2008, consistent with this ruling, and will use the Energy Division-approved template in their June 1, 2008 applications. The information described below will be provided for all DR proposals, either in tables or narrative, as appropriate and agreed upon in the program description template.

### **5.1. Required Information on Existing Programs**

The Applications shall include at least the following information on any existing program that an IOU proposes to continue during the 2009-2011 period, and for all DR contracts that began between 2006 and 2008 and are approved to continue into the 2009-2011 period.

1. Budget for 2006-2008.
2. Enrollment from 2006-2008, including:
  - number of participants,
  - type of participants,
  - Megawatts, and
  - Megawatts by type of participant.
3. Proposed changes in the programs for 2009-2011 (if any) from existing activities, and reasons for those proposed changes.

4. Copies of contracts with providers/aggregators, and information sufficient to verify contract performance.
5. The actual (observed) DR load reduction due to the program, and how it was distributed among enrolled customers.

**Note:** This DR load reduction should be calculated with the baseline used in any previous application proposing the program, to allow comparisons of actual performance with previously estimated performance, and if appropriate, should also be calculated using an improved new baseline methodology if the IOU has reason to believe that a different baseline yields more accurate results. Recent studies and the draft (and ultimately, adopted) DR load impact protocols should be used to guide calculations of load impact.<sup>20</sup> All methodologies used (both old and new) and the reason for any changes in methodology should be explained. To the extent that there are changes from past estimates, the reasons for those changes should be explained, along with why the new and improved method is more accurate.

## **5.2. Required Information for All Programs (continuing and new proposals)**

1. Program details, including:
  - budget,
  - trigger mechanism,
  - notification timing,
  - baseline or other terms for settlement, and
  - incentive amounts.

Program details may be provided in a matrix or table format, consistent with the template developed by the IOUs and approved by Energy

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<sup>20</sup> Though the primary focus of the Load Impact Protocol development effort in R.07-01-041 is on long-term planning, many of the principles should be applicable to calculating ex post impacts.



Division, but applications must also include a narrative discussion of the rationales for all choices and estimates.

2. Estimated enrollment for each year, and how it was determined.
3. How programs fit into local resource adequacy.
4. Estimated Load impact, based on protocols to be adopted. These estimates should be sufficiently accurate that they can be used in the Long Term Procurement Planning proceeding.<sup>21</sup>

**Note:** PG&E (and possibly the other IOUs) requested early guidance from Energy Division on how to calculate the anticipated load impacts for its proposed 2009-2011 DR Applications, given that the Commission has not yet issued a decision in this proceeding on the proposed load impact protocols. PG&E requested early guidance in order to arrange the necessary resources to calculate the load impacts. As discussed in an e-mail to the service list on February 8, 2008,<sup>22</sup> the IOUs may proceed using the Joint Utilities Revised Straw Proposal as modified by the Energy Division staff report dated October 12, 2007, as the basis for their load impact estimates (for individual DR programs and the overall portfolio) in their DR Applications. When the Commission adopts final load impact protocols, IOUs will then be required to make any necessary modifications to their initial analyses to ensure consistency with the final versions of the protocols, including any revisions recommended during implementation of the final Load Impact Process Protocol. In this way, IOUs can begin their analysis now and still ensure that their filed applications

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<sup>21</sup> Updates or supplemental testimony to incorporate different assumptions may be needed to assure accurate numbers, but IOUs should be comfortable using the number submitted in these applications in future Long-Term Procurement Planning proceedings if they are found to be reasonable here.

<sup>22</sup> See Attachment B.

contain estimates consistent with the final adopted Load Impact Protocols.

5. Estimated Cost Effectiveness (CE), based on protocols to be adopted.

**Note:** It is possible that a cost effectiveness methodology may not be adopted in time to allow IOUs to use it to complete a full cost effectiveness analysis of their proposals before the applications are filed. In this case, IOUs should include in their applications a basic cost effectiveness analysis of each program consistent with the parties' CE framework filed on November 19, 2007,<sup>23</sup> with explanations of all choices in areas in which the proposed framework provides flexibility, and should expect to amend their applications with additional cost effectiveness analysis of all programs within 30 days after the Commission adopts a final CE methodology, unless otherwise required in the CE decision.

6. Marketing and outreach funding disaggregated by target customer  
(if appropriate given future guidance on EE/DR coordination)
7. Proposal of and schedule for how each program will align with MRTU Release 1/ 1A and beyond.
8. Other relevant information, as appropriate and necessary.

### **5.3. Required Information on the Proposed Portfolio**

1. Estimated total customers and load (in MW) available
2. Expected load drop, total and broken down by relevant factors, including:
  - Customer type.

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<sup>23</sup> Joint Comments of California Large Energy Consumers Association, Converge, Inc., DRA, EnergyConnect, Inc., EnerNoc, Inc., Ice Energy, Inc., PG&E, SDG&E, SCE, and The Utility Reform Network Recommending a Demand Response Cost Effectiveness Evaluation Framework, filed 11/19/2007 in R.07-01-041.

- Notification timing.
  - Trigger mechanism, and
  - Other factors as appropriate.
3. Cost effectiveness of the overall portfolio, again total and broken down by relevant factors.

## **6. Potential Evaluation Criteria**

The specific criteria and weighting of those criteria in determining whether proposed programs should be adopted will be determined in the Application proceeding itself. The following list includes factors that may be considered in evaluating the programs, and IOUs should keep these criteria in mind when designing DR activities and providing information in support of their proposals.

1. Projected future performance, including but not necessarily limited to estimated participation (customers and enrolled load) and estimated load drop.
2. Cost.
3. Load Impact –during peak times for each program year.
4. Cost Effectiveness – estimated over 2009-2011 period.
5. Operational compatibility with future wholesale markets.
6. Versatility (for example: Can a program be called under a variety of circumstances, or only in very rare or specialized situations? Does it have multiple triggers?)
7. Flexibility to adapt to changes in operation of the wholesale market.
8. Locational Value (for example: Can it be called by specific location if needed? Does it count towards locational resource adequacy or more specific local needs?)
9. Consistency of offerings throughout the state (for example, are equivalent programs available in or appropriate for other parts of the state?)
10. Simplicity/Understandability (for example: Can customers understand how programs operate and what is

expected of them? Are programs likely to be accepted by customers?)

11. Track record of performance (if proposing continuation of existing programs); this includes, but may not be limited to, actual load drop (especially compared to enrolled load and estimated load drop), target groups and types of participants, actual cost, how often was it called, actual load drop rate, actual load pick-up rate, and other factors as appropriate. Include an explanation of why actual load drop may not have been as anticipated.

## **7. Other Information**

In addition to the considerations described above, utilities should include in their applications a discussion of how and to what extent information on DR programs and pilots can and will be shared among the IOUs, and with Community Choice Aggregators, Municipal Utilities, and other load serving entities. IOUs should also include information on how they plan to ensure that otherwise confidential information about program operation is made available to the CAISO to the extent it is needed for operational planning and to the CEC for load forecasting.

**IT IS RULED** that the guidance on content and format of the Investor-Owned Utilities' 2009-2011 Demand Response Applications are as described in this ruling.

Dated February 27, 2008, at San Francisco, California.

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/s/ JESSICA T. HECHT  
Jessica T. Hecht  
Administrative Law Judge

## **Attachment A**

Among the large East Coast ISO/RTO's the New York Independent System Operator is similar to California's in that a single ISO is dedicated to the wholesale electricity needs of one state. Unlike the California ISO the New York ISO administers Demand Response programs. The NYISO administers an Emergency Demand Response Program. Within the NYISO, participants to the Emergency Demand Response Program sign an agreement denoting the amount of curtailable capacity available for voluntary reduction during ISO-declared emergencies in exchange for an energy payment. Those entities wishing to receive capacity payments as well as energy payments for curtailment during system emergencies must submit an application for inclusion in NYISO's Installed Capacity Special Case Resource Market (ICAP SCR). Those entities that qualify for ICAP inclusion and thereby receive capacity payments as a Special Case Resource must submit bids in the day-ahead market as part of the Day-Ahead Demand Reduction Program. If their bid is not accepted in the day-ahead market but an emergency is declared, these resources must curtail their available capacity in conformance with information submitted to NYISO as part of their master file application to become Special Case Resources.

In other words, demand response resources that receive capacity payments in the NYISO are required to submit a price response bid in the day-ahead market. In the event that an emergency is called, those resources whose price responsive bid was not accepted must respond to the emergency by curtailing available load. Energy Division has found that the New England ISO and PJM treat emergency DR resources similarly.

The Electric Reliability Council of Texas, otherwise known as ERCOT, has a unique system for administering an Emergency Demand Response Program. ERCOT periodically selects Emergency Interruptible Load Service (EILS) through Requests for Proposals (RFPs). The purpose of the RFP is to obtain cost and qualification information from entities to provide EILS. EILS resources offer their EILS bid to ERCOT stipulating a price per megawatt hour. EILS resources may contract to participate in other DR programs but they may not obligate the same capacity offered in the EILS program. ERCOT's EILS is not a market-based program in which loads bid into day-ahead or real-time markets. These resources cannot bid into the Balancing Energy market, or Ancillary Services market and cannot participate as price responsive load. The program is not a backstop for insufficient planning reserves margins, nor a tool to meet long-term capacity needs. This program and its participant capacity is not part of the reserve margin calculation.

**(END OF ATTACHMENT A)**

## Attachment B

**From:** Hecht, Jessica T.

**Sent:** Friday, February 08, 2008 4:14 PM

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**Cc:** Econome, Janet A.

**Subject:** R.07-01-041: Response to PG&E's informal request for guidance

To Parties of R.07-01-041:

It has come to my attention that PG&E (and possibly the other Investor Owned Utilities (IOUs)) requested guidance from Energy Division on how to calculate anticipated load impacts in its 2009-2011 Demand Response (DR) Applications, given that the Commission has not yet issued a decision in this proceeding adopting load impact protocols. PG&E requests this guidance now in order to arrange the necessary resources to begin calculating the load impacts.

After conferring with Energy Division staff, I provide the following guidance: until the Commission issues a decision on demand response load impact protocols, the IOUs may proceed using the draft load impact protocols (the Joint Utilities' Revised Straw Proposal as modified by the Energy Division staff report dated October 12, 2007) as the basis for calculating the load impact estimates for individual programs and the overall portfolio in their 2009-2011 DR Applications. When a final version of the protocols is adopted, IOUs should be prepared to make appropriate modifications to these initial analyses consistent with the final versions of the protocols, including any revisions to the calculations that may be required by the implementation of the Load Impact Process Protocol. This preliminary guidance will be confirmed in a forthcoming ruling that will provide more comprehensive guidance on the applications.

If you have any questions on this interim direction, please contact Dorris Lam ([dnl@cpuc.ca.gov](mailto:dnl@cpuc.ca.gov)) or Bruce Kaneshiro ([bsk@cpuc.ca.gov](mailto:bsk@cpuc.ca.gov)) in the Commission's Energy Division.

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(END OF ATTACHMENT B)

### **INFORMATION REGARDING SERVICE**

I have provided notification of filing to the electronic mail addresses on the attached service list.

Upon confirmation of this document's acceptance for filing, I will cause a Notice of Availability of the filed document to be served upon the service list to this proceeding by U.S. mail. The service list I will use to serve the Notice of Availability of the filed document is current as of today's date.

Dated February 27, 2008, at San Francisco, California.

/s/ ANTONINA V. SWANSEN

Antonina V. Swansen

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**Last Updated on 27-FEB-2008 by: AJH  
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